

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-19 have been amended as follows:

Listing of Claims:

Claim 1 (currently amended): A method of forming a member having an inside-diameter portion with a small diameter, comprising the steps of :

forming a large-diameter recess in a material;

machining the recess; and

swaging the material from an outside by inserting a mandrel having a diameter equal to a diameter of an inner peripheral portion of an aimed member.

Claim 2 (currently amended): A method of forming a member, including a method of providing an undercut in an inner peripheral portion of the member, comprising the steps of:

[[1:]] forming a recess having a diameter larger than that of the inner peripheral portion of the member in a material;

[[2:]] forming an undercut at an inner periphery of the recess;

[[3:]] inserting a mandrel having a diameter equal to a diameter of an inner peripheral portion of an aimed member into the recess of the material having been formed with the undercut; and

[[4:]] swaging, from an outside, the material into which the mandrel has been inserted so that

an inside diameter of the recess of the material is decreased to an outside diameter of the mandrel with the undercut left.

Claim 3 (currently amended): The method of forming a member according to claim 2, ~~characterized in that~~ wherein the member is a fuel injection nozzle.

Claim 4 (currently amended): A method of forming a member having an undercut, comprising the steps of:

forming a recess having a diameter larger than the diameter of an inner peripheral portion of the member in a material;

forming the undercut at an inner periphery of the recess;

inserting a mandrel having a diameter equal to a diameter of an inner peripheral portion of an aimed member and having a conical tip end portion into the recess of the material having been formed with the undercut; and

swaging, from an outside, the material into which the mandrel has been inserted, by which an inside diameter of the recess of the material is decreased to an outside diameter of the mandrel with the undercut left, and at the same time, a tip end portion of the inner peripheral portion of the aimed member is formed into a female taper shape following the tip end portion of the mandrel.

Claim 5 (currently amended): The method of forming a member having an undercut according to claim 4, ~~characterized in that~~ wherein a positioning hole into which the mandrel tip end

portion is inserted is formed in a center of the large-diameter recess, and a depth of the positioning hole is equal to or shallower than a length of the mandrel tip end portion and an opening angle thereof is equal to or larger than an angle of the mandrel tip end portion.

Claim 6 (currently amended): The method of forming a member having an undercut according to claim 5, ~~characterized in that~~ wherein the positioning hole is formed by forging at the same time that the recess is formed.

Claim 7 (currently amended): The method of forming a member having an undercut according to ~~claims 4 to 6, characterized in that~~ claim 4, wherein the member is a fuel injection nozzle.

Claim 8 (currently amended): A method of forming a member having an undercut, comprising the steps of:

forming a recess having a diameter larger than the diameter of an inner peripheral portion of the member in a material;

forming the undercut at an inner periphery of the recess;

inserting a mandrel having a diameter equal to a diameter of an inner peripheral portion of an aimed member into the recess of the material having been formed with the undercut; and

swaging, from an outside, the material into which the mandrel has been inserted so that an inside diameter of the recess of the material is decreased to an outside diameter of the mandrel with

the undercut left, ~~characterized in that~~ wherein a chamfered portion is formed in a bottom portion of the recess of the material before the swaging operation, and a formation region of the chamfered portion is within an outside region that provides a clearance with a tip end of the mandrel abutted on the bottom portion of the recess.

Claim 9 (currently amended): The method of forming a member having an undercut according to claim 8, ~~characterized in that~~ wherein the formation region of the chamfered portion is 35 to 100% of a clearance between the mandrel and the inner periphery of the recess.

Claim 10 (currently amended): The method of forming a member having an undercut according to ~~claim 8 or 9, characterized in that~~ claim 8, wherein the member is a fuel injection nozzle.

Claim 11 (currently amended): A method of forming a member having an undercut, comprising the steps of:

forming a recess having a diameter larger than the diameter of an inner peripheral portion of the member in a material;

forming the undercut at an inner periphery of the recess;

inserting a mandrel having a diameter equal to a diameter of an inner peripheral portion of an aimed member into the recess of the material having been formed with the undercut; and

swaging, from an outside, the material into which the mandrel has been inserted so that an

inside diameter of the recess of the material is decreased to an outside diameter of the mandrel with the undercut left, ~~characterized in that~~ wherein an excess thickness portion is provided in a predetermined length range from a bottom of the recess at the inner or an outer periphery of the recess of the material before the swaging operation.

Claim 12 (currently amended): The method of forming a member having an undercut according to claim 11, ~~characterized in that~~ wherein the excess thickness portion is formed by forging at the same time that the recess is formed.

Claim 13 (currently amended): The method of forming a member having an undercut according to ~~claim 11 or 12, characterized in that~~ claim 11, wherein the member is a fuel injection nozzle.

Claim 14 (currently amended): A valve guide for slidingly guiding a valve stem, ~~characterized in that~~ wherein the valve guide is formed of an Al-base composite material, and an oil groove is formed in an inner peripheral surface of the valve guide.

Claim 15 (currently amended): A method of forming a valve guide for slidingly guiding a valve stem, comprising the steps of:

forming a recess having a diameter larger than the diameter of an inner peripheral portion into which the valve stem is inserted in a valve material; and

swaging, from an outside, the material into which a mandrel has been inserted so that an inside diameter of the recess of the material is decreased to an outside diameter of the mandrel by inserting the mandrel having almost a same diameter as the diameter of the valve stem into the large-diameter recess.

Claim 16 (currently amended): The method of forming a valve guide according to claim 15, ~~characterized in that~~ wherein a groove remaining as an oil groove after swaging operation is formed in advance in an inner peripheral surface of the large-diameter recess.

Claim 17 (currently amended): The method of forming a valve guide according to claim 15, ~~characterized in that~~ wherein the material is an Al-base composite material.

Claim 18 (currently amended): A method of forming a tubular member formed with a small-diameter hole along the axial direction, comprising the steps of:

obtaining an intermediate material such that a diameter of an inside-diameter hole has a dimension allowing metal plating;

forming a metallic deposit in the inside-diameter hole of the intermediate material; and

swaging, from an outside diameter side, the intermediate material into which a mandrel has been inserted so that the diameter of the inside-diameter hole of the intermediate material is

decreased to an outside diameter of the mandrel by inserting the mandrel having a diameter corresponding to the diameter of the small-diameter hole of an aimed tubular member into the inside-diameter hole of the intermediate material formed with the metallic deposit.

Claim 19 (currently amended): The method of forming a tubular member according to claim 18, ~~characterized in that~~ wherein a material for the tubular member is an aluminum alloy or an aluminum-base composite material, and a material for the metallic deposit a highly wear resistant material such as iron (Fe) or nickel – silicon carbide (Ni-SiC).